Claims

1. A wire-strike system including;

   a wire cutter including at least one pair of electrodes, electrically insulated from each other and mountable upon an outer surface of an aircraft, said electrodes being connectable to a power source capable of generating an electrical potential difference between the electrodes and in the event of a wire-strike, supplying a short-circuit current flow through a portion of said wire connecting both electrodes.

2. A system as claimed in claim 1, wherein said electrodes are attached to an electrically insulated mounting base portion.

3. A system as claimed in claim 2, wherein said base portion and electrodes are formed as an elongated strip, wherein the electrodes are elongated and located adjacent, but spaced apart from each other.

4. A system as claimed in any one of claims 1-3, wherein a pair of electrodes are orientated substantially parallel to each other.

5. A system as claimed in any one of claims 1-4, wherein at least one pair of said wire cutter electrodes are formed as an entrapment element, capable of guiding a wire, for severing, into an intersection between convergent deflector portions located either side thereof.

6. A system as claimed in claim 5, wherein said intersection is notched.

7. A system as claimed in claim 5 or claim 6, wherein electrodes located on said deflector portions and/or said intersection are formed with an outward cutting edge.

8. A system as claimed in any one of claims 5 - 7, wherein electrodes of opposing

polarity are positioned on opposing sides of said intersection.

9. A system as claimed in any one of the preceding claims, wherein said wire cutter includes a plurality of electrode pairs, independently energisable by said power source.

10. A system as claimed in claim 9, wherein said plurality of electrode pairs are capable of being simultaneously energised.

11. A system as claimed in claim 9 wherein said plurality of electrode pairs are capable of being selectively energised.

12. A system as claimed in claim 11, further including sensing and control means for sensing the proximity of a wire and selectively energising an electrode pair closest the wire.

13. A system as claimed in claim 11 or claim 12, wherein said proximity sensing means including capacitive or inductive sensors.

14. A system as claimed in any one of the preceding claims, wherein the wire cutter electrodes may be formed as a series of substantially equidistant, parallel conductors of alternately opposing electrical polarity.

15. A system as claimed in any one of the preceding claims, wherein said electrodes are provided with a rupturable, non-conductive coating or film.

16. A system as claimed in any one of the preceding claims, further including an electrical power source and electrical connections between said power source and the or each pair of wire cutter electrodes.

17. An aircraft provided with a wire-strike system as claimed in any one of claims 1-16.

18. An aircraft provided with a wire-strike system including:

- a wire cutter including at least one pair of electrodes, electrically insulated from each other and mounted upon an outer surface of the aircraft, said electrodes being connected to a power source capable of generating an electrical potential difference between the electrodes and in the event of a wire-strike, supplying a short-circuit current flow through a portion of said wire connecting both electrodes;

- an electrical power source, and

- electrical connections between said power source and the or each pair of wire cutter electrodes.

19. An aircraft as claimed in claim 18, wherein said electrodes are attached to an electrically insulated mounting base portion.

20. An aircraft as claimed in claim 19, wherein said base portion and electrodes are formed as an elongated strip, wherein the electrodes are elongated and located adjacent, but spaced apart from each other.

21. An aircraft as claimed in any one of claims 17 - 20, wherein said electrodes are fixed directly to electrically non-conductive portions of the aircraft's surface.

22. An aircraft as claimed in any one of claims 17 - 21, wherein said wire cutter electrodes are positioned on one or more leading surfaces of an aircraft.

23. An aircraft as claimed in any one of claims 17 - 22, wherein said at least one pair of said wire cutter electrodes are formed as an entrapment element, capable of guiding a wire for severing into an intersection between convergent deflector portions located either side thereof, said entrapment elements being positioned at one or more entrapment positions about the aircraft's surface.

24. An aircraft as claimed in any one of claims 17 - 22, wherein said wire cutter includes a plurality of electrode pairs, independently energisable by said power source.

25. An aircraft as claimed in claim 24, further including sensing and control means for sensing the proximity of a wire and selectively energising an electrode pair closest the wire.

26. A method of severing a wire impacting an aircraft in a wire-strike, using an system including:

a wire cutter including at least one pair of electrodes, electrically insulated from each other and mountable upon an outer surface of an aircraft, said electrodes being connected to an electrical power source.

said method including the steps of:

- generating an electrical potential difference between the elements;
- and in the event of a wire-strike, supplying a short-circuit current flow through a portion of said wire connecting both elements;
- heating said portion of said wire connecting both elements until wire at least partially melts and severs.

27. A wire-strike system substantially as hereinbefore described, with reference to, and as shown in the accompanying drawings.

28. A method of severing a wire impacting an aircraft in a wire-strike substantially as hereinbefore described, with reference to, and as shown in the accompanying drawings.